

Warm Up # 8- 3

A bag contains 5 red marbles, 3 green and 2 blue.

Find the probability of:

1. Selecting a green
2. Selecting a red
3. If you didn't put the green one back, is the probability of selecting red still the same?

What is the probability of selecting a green one AND a red one?

HW Questions: p. 266

- 2 Illustrate on a 2-dimensional grid the sample space for:
 - a simultaneously rolling a die and tossing a coin
 - d twirling two square spinners, one labelled A, B, C, D and the other 1, 2, 3, 4.
- 3 Illustrate on a tree diagram the sample space for:
 - a simultaneously tossing a 5-cent and a 10-cent coin
 - b tossing a coin and twirling an equilateral triangular spinner labelled A, B, and C
 - c twirling two equilateral triangular spinners labelled 1, 2, and 3, and X, Y, and Z
 - d drawing two tickets from a hat containing a number of pink, blue, and white tickets.

EXERCISE 9C.1 p. 268

- 1 A marble is randomly selected from a box containing 5 green, 3 red, and 7 blue marbles. Determine the probability that the marble is:

a red

d not red

b green

e neither green nor blue

c blue

f green or red.

a) $P(R) = \frac{3}{15} = \boxed{\frac{1}{5}}$

d) $P(R') =$

$P(G) =$

$P(B) =$

e) $P(G \cup B)'$

$P(G' \cap B')$

$P(G \cup R)$

- 2 A carton of a dozen eggs contains eight brown eggs. The rest are white.

a How many white eggs are there in the carton?

b Find the probability that an egg selected at random is:

i brown

ii white.

- 3 A dart board has 36 sectors labelled 1 to 36. Determine the probability that a dart thrown at the centre of the board will hit:

a a multiple of 4

b a number between 6 and 9 inclusive

c a number greater than 20

d 9

e a multiple of 13

f an odd number that is a multiple of 3

g a multiple of 4 and 6

h a multiple of 4 or 6.

$\rightarrow P(\text{multiples of } 4) \rightarrow \frac{9}{36} = \frac{1}{4}$

$\rightarrow P(6 \leq X \leq 9)$

$P(X > 20)$ d) $P(X = 9)$

e) $P(X = 13) + P(X = 26)$
 $\frac{1}{36} + \frac{1}{36} = \frac{2}{36} = \frac{1}{18}$

f) $\{3, 9, 15, 21, 27, 33\}$

g) let $A = \text{multiples of } 4$
 $B = \text{multiples of } 6$ g) $P(A \cap B) = \frac{1}{12} = \frac{3}{36}$

$P(A) = \frac{9}{36}$ $P(A \cup B) = P(A) + P(B) - P(A \cap B)$
 $P(B) = \frac{6}{36}$ $= \frac{9 + 6 - 3}{36}$

4 What is the probability that a randomly chosen person has his or her next birthday:

a on a Tuesday

b on a weekend

c in July

d in January or February?

c P(in July)

$$= \frac{4 \times 31}{(365 \times 3) + 366} \quad \{\text{over 4 year period}\}$$

$$= \frac{124}{1461}$$

d P(in January or February)

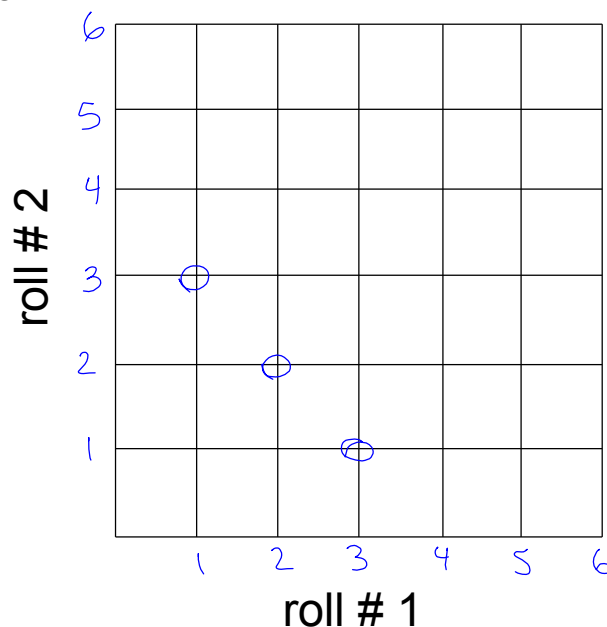
$$= \frac{(4 \times 31) + (3 \times 28) + (1 \times 29)}{(3 \times 365) + (1 \times 366)}$$

{over 4 year period, remember leap years}

$$= \frac{237}{1461} = \frac{79}{487}$$

Lattice or Grid Diagrams

To organize the outcomes of an event like our warm up:



ways to
get a
sum of
4

↓

1, 3
2, 2
3, 1

HW: 9C.1 p. 269, # 5, 6

9C.2 p. 270, # 2

9C.3 p. 271, # 3

9D.1 p. 273, # 2 (w/tree), 5

9D.2 p. 274, # 2, 4

Use good notation wherever possible!